

# NAVIGANT

ENERGY

## Benchmarking of Vermont's 2011 and 2012 Demand Side Management Programs

*Prepared for:  
VT Public Service Department*

*Prepared by:  
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## Purpose of Study

- » Vermont Public Service Department (PSD) is conducting an “Overall Performance Assessment” (OPA) of current EEU’s.
  - Efficiency Vermont
  - Burlington Electric Department
  
- » In order to ensure performance under the new long term structure, PSD requested assistance in performing a benchmarking review of EVT and BED’s energy efficiency service delivery and performance to inform the OPA process.
  
- » Benchmarking has been found to be an appropriate tool to ensure Vermont’s programs compare well to programs in other jurisdictions. This method of performance review would also be used to inform the setting of future indicators of performance for an EEU Appointee.

## Approach

- » Navigant reviewed the 2011 electric energy efficiency DSM performance of 27 organizations and the 2012 electric energy efficiency DSM performance of 24 organizations compared to Efficiency Vermont's (EVT) and Burlington Electric Department's (BED) 2011 and 2012 DSM results.
- » Sample group included investor-owned utilities (IOUs), statewide agencies, and municipal utilities who are included in NEEP's Regional Energy Efficiency Database (REED). IOUs, municipals, and cooperatives from Minnesota were also included.
- » Given the selection of organizations, the typical performance of this group is likely not typical of all DSM programs across the country. Thus, in this study, when we describe a result as typical, we mean it is typical of this select group.

## Benchmarking Objectives

- » The benchmarking study seeks to answer:
  - What is the overall performance of Vermont's EEUs compared to 27 other mature DSM programs?
  
  - How do the Vermont's EEU's compare in terms of:
    - DSM energy and demand savings as a percent of electric sales?
    - DSM spending as a percent of electric revenues?
  
  - Are the performances of Vermont's EEUs noticeably above, below, or average with respect to performance and cost for sector-level program results (residential and C&I)?
  
  - How do Vermont's EEUs compare in terms of levelized and lifetime costs of energy savings, \$/kWh, with their peers?

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## 2011 and 2012 Standard Benchmarking

- » Standard Benchmarking
  - Reviewed 2011 data for 27 other organizations
  - Reviewed 2012 data for 24 other organizations
  - Comparison of reported program savings and costs (excluding Demand Response programs)
  - Revenue and sales volume data for EVT and XE (MN) exclude revenue and sales from C&I Opt-out customers. We are uncertain of opt-out revenue and sales for other utilities.
  - Data normalized, presented as median:
    - Expenditures as a percentage of revenue,
    - First Year costs of conserved energy, cents/kWh saved,
    - Levelized costs of conserved energy, cents/kWh saved,
    - Lifetime costs of conserved energy, cents/kWh saved,
    - Energy savings as a percentage of energy sales, and
    - Peak demand savings as a percentage of peak demand (detailed in report, not this presentation)
  - Wherever possible, Navigant collected savings that were at the generator and gross.
    - If savings for a utility were reported at the meter, Navigant estimated generator savings by applying the reported line-loss factor.

## Levelized Cost of Energy Savings and Cost of Lifetime Savings

- » Navigant provided benchmarking comparison on a levelized cost basis according to the following formula, which is consistent with the methodology used in the REED database.\*

### Levelized Cost of saved energy (CSE)

1. Cost of Saved Energy (in \$/kWh) =  $(C \times 10^6) \times (\text{Capital Recovery Factor}) / (D \times 10^3)$
2. Capital Recovery Factor =  $[A \times (1+A)^B] / [(1+A)^B - 1]$

Where:

A = Discount rate study (2.48%- AESC study)

B = Estimated measure life in years (total lifetime savings/total annual savings- from REED or utility reports)

C = Total program cost in millions of dollars

D = Total MWh saved that year by the energy efficiency program

- » Navigant also provided benchmarking comparison on the cost of lifetime savings where we took annual DSM spending reported for each utility divided by lifetime savings reported for each utility (where available).

\* Personal communication with Cecliy McChalicher, NEEP, June 16, 2013

## 2012 Specialized Benchmarking

- » Specialized Benchmarking
  - Reviewed 2012 data for 8 other organizations
  - Filtered subset of Standard 2012 organizations
    - Excluded cost and savings from programs targeted at:
      - › Demand Response
      - › Low Income
      - › Fuel Switching
      - › Market Transformation
      - › Behavioral
      - › Codes and Standards
  - Analyzed program-level results
  - Performed best practice analysis i.e. determined organizations achieving above median energy savings and below median costs.
    - Conducted telephone interviews with 5 best practice utilities

# Organizations Benchmarked

State	Organization	Standard Analysis	Specialized Analysis	Utilities Interviewed
VT	Efficiency Vermont (EVT)	X	X	X
	Burlington Electric Department (BED)	X	X	X
CT	Connecticut Light & Power (CL&P)	X	X	X
	Connecticut Munciple Electric Energy Cooperative (CMEEC)	X	X	
MA	National Grid (NGrid)	X	X	
	NSTAR	X	X	X
	Western Massachusetts Electric Co (WMECO)	X		
MD	Baltimore Gas & Electric (BGE)	X		
	Delmarva Power & Light (DPL)	X		
	Potomac Edison	X		
	(PEPCO)	X		
	Souther Maryland Energy Cooperative (SMECO)	X	X	
ME	Efficiency Maine (EME)	X	X	X
MN	Moorhead Municipal	X	X	
	East Central Energy Coop	X		
	Xcel Energy (XE)	X		
NH	Granite State Electric Co (GSECO)	X*		
	Public Service of New Hampshire (PSNH)	X	X	
	Unitil	X		
NY	ConEdison	X		
	Central Hudson	X		
	Long Island Power Authority (LIPA)	X		
	Niagara Mohawk	X		
	New York State Electric & Gas (NYSEG)	X		
	NYSERDA	X*		
	Orange & Rockland	X		
Rochester Gas & Electric	X			
RI	Narragansett Electric Co (NECO)	X		

\*Only 2011 data for GSECO and NYSERDA were included in this study. 2012 data for GSECO was not provided in REED and Navigant found problems with NYSERDA's 2012 data was not able to get it cleaned in time.

## Benchmarking is not a horse race.

- » Given the variation in program offerings, deemed savings values and reporting practices across EE portfolios, no benchmarking can achieve a strict apples-to-apples comparison.
- » The usual caveats apply to any accounting information: different organizations aggregate and allocate costs differently (e.g., Key Account manager time), so these results can only be taken as indicative, particularly regarding the cost per first year kWh saved
- » Benchmarking is, however, useful to identify which organizations and programs merit being analyzed more closely.
- » Benchmarking is not a substitution for a process evaluation – it shows what utilities are achieving in terms of energy and demand savings and what they're spending on programs to achieve these savings but to derive meanings/conclusions from this data is challenging to do.

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**3 » Highlights of Standard and Specialized Analysis**

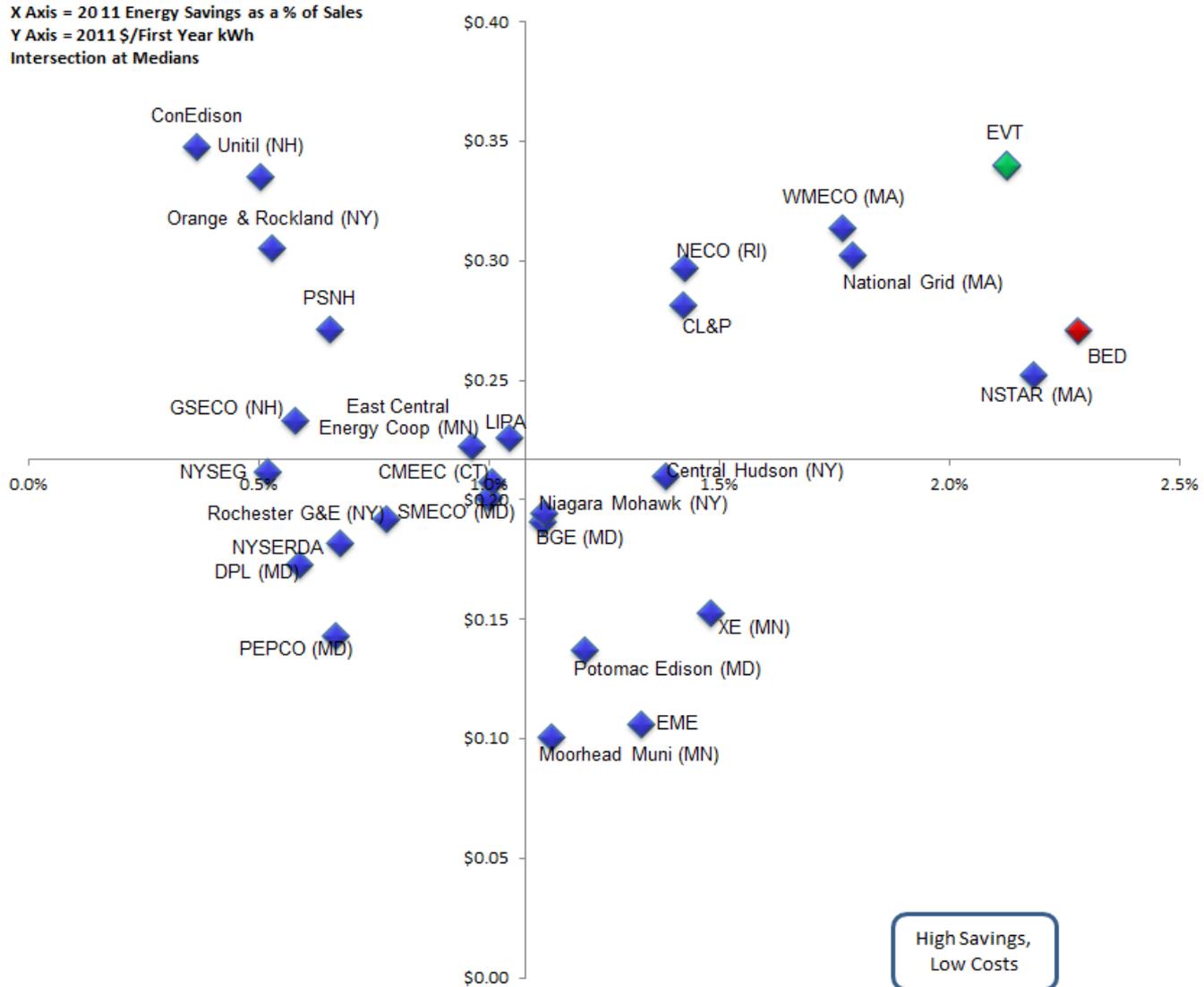
4 » Conclusions

## 2011 and 2012 Overall Electric Benchmarking Results

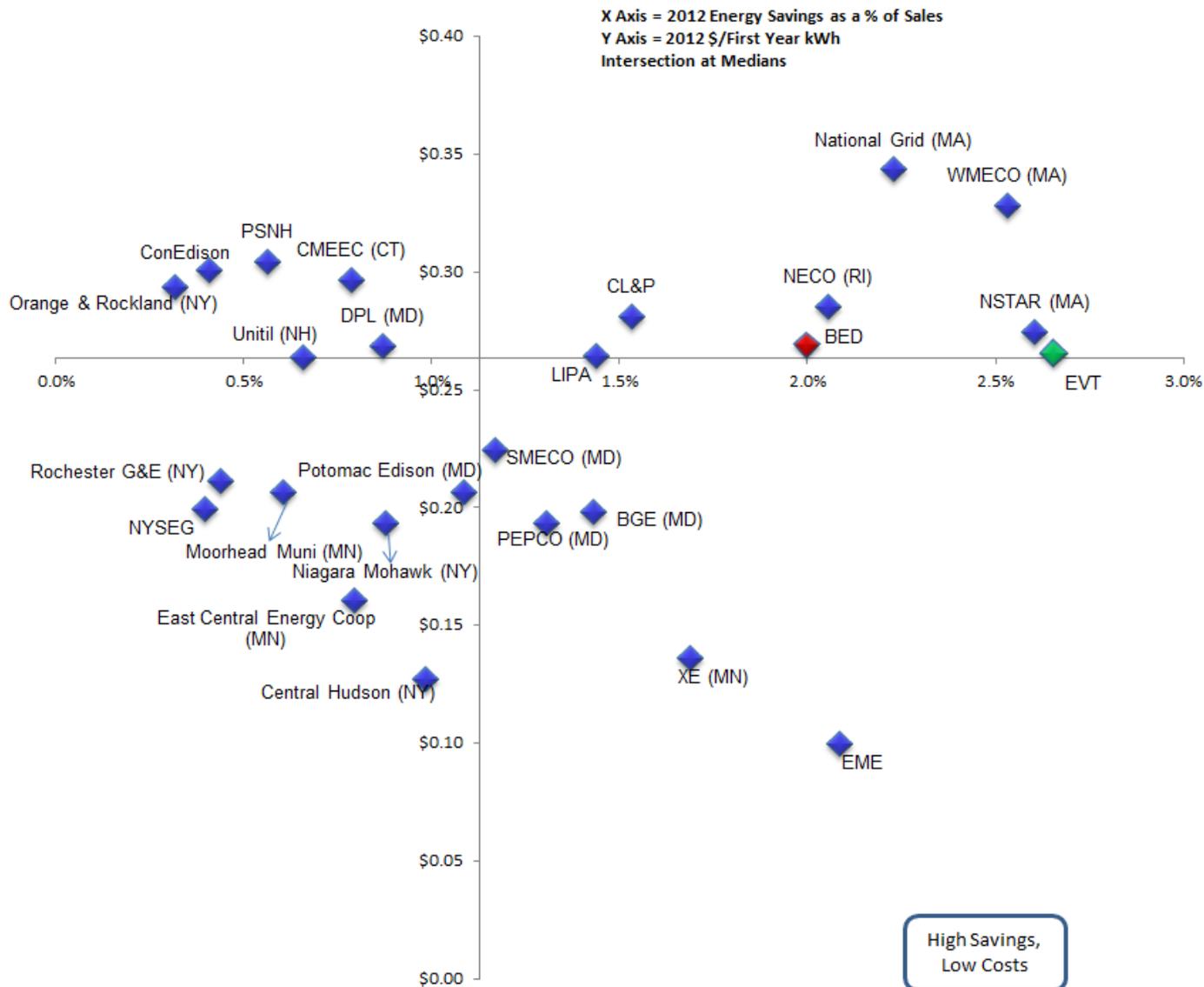
2011	Spending as % of Revenue	Energy Savings as % of Sales	Summer Peak Demand Savings as % of Peak Demand	Retail Cost of Energy \$/kWh	Cost of First Year Savings		Levelized Cost of Energy Savings \$/kWh	Cost of Lifetime Savings \$/kWh
					\$/kWh	\$/kW		
All Benchmarked Median	1.8%	1.1%	0.7%	\$0.10	\$0.22	\$1,287	\$0.02	\$0.02
EVT	5.0%	2.1%	1.7%	\$0.14	\$0.34	\$2,428	\$0.04	\$0.03
BED	4.4%	2.3%	2.2%	\$0.14	\$0.27	\$1,408	\$0.03	\$0.03

2012	Spending as % of Revenue	Energy Savings as % of Sales	Summer Peak Demand Savings as % of Peak Demand	Retail Cost of Energy \$/kWh	Cost of First Year Savings		Levelized Cost of Energy Savings \$/kWh	Cost of Lifetime Savings \$/kWh
					\$/kWh	\$/kW		
All Benchmarked Median	2.2%	1.1%	0.7%	\$0.10	\$0.26	\$1,511	\$0.03	\$0.03
EVT	4.7%	2.7%	1.4%	\$0.15	\$0.27	\$1,880	\$0.03	\$0.03
BED	3.9%	2.0%	1.3%	\$0.14	\$0.27	\$2,337	\$0.03	\$0.02

## 2011 Overall Energy Savings as % of Sales and Cost of First Year Energy Savings, \$/kWh



## 2012 Overall Energy Savings as % of Sales and Cost of First Year Energy Savings, \$/kWh



## 2011 and 2012 C&I Electric Benchmarking Results

2011	Spending as % of Revenue	Energy Savings as % of Sales	Summer Peak Demand Savings as % of Peak Demand	Cost of First Year Savings		Levelized Cost of Energy Savings	Cost of Lifetime Savings
				\$/kWh	\$/kW	\$/kWh	\$/kWh
All Benchmarked Median	2.7%	0.8%	0.8%	\$0.22	\$1,158	\$0.02	\$0.02
EVT	6.5%	1.9%	1.8%	\$0.43	\$2,610	\$0.04	\$0.03
BED	4.1%	1.0%	1.1%	\$0.55	\$2,612	\$0.05	\$0.04

2012	Spending as % of Revenue	Energy Savings as % of Sales	Summer Peak Demand Savings as % of Peak Demand	Cost of First Year Savings		Levelized Cost of Energy Savings	Cost of Lifetime Savings
				\$/kWh	\$/kW	\$/kWh	\$/kWh
All Benchmarked Median	3.0%	0.8%	0.8%	\$0.24	\$1,432	\$0.02	\$0.02
EVT	5.4%	2.8%	1.5%	\$0.26	\$1,870	\$0.02	\$0.02
BED	3.6%	1.6%	1.4%	\$0.31	\$1,901	\$0.03	\$0.02

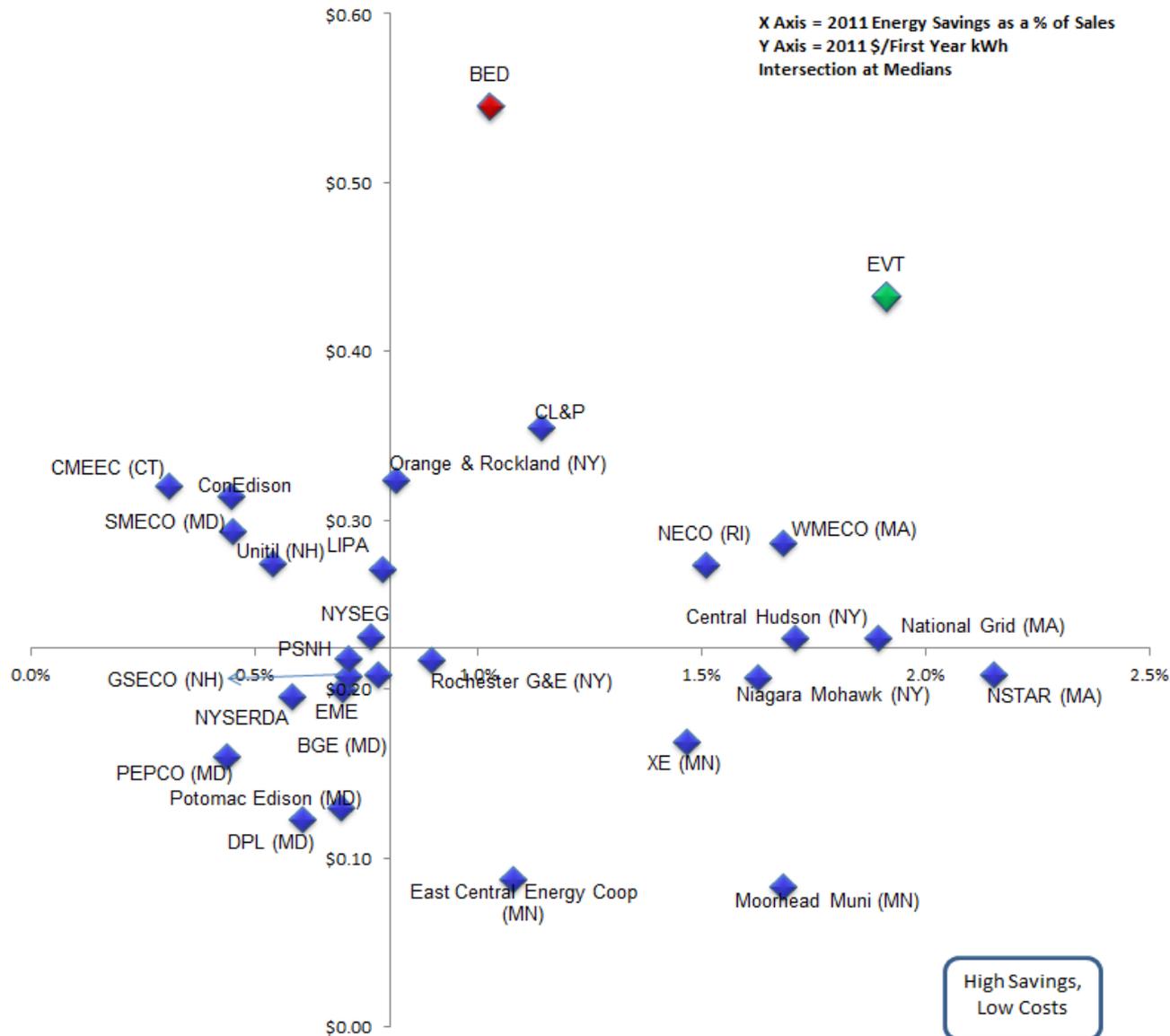
## 2012 Overall Electric Specialized Benchmarking Results

	Spending as % of Revenue	Energy Savings as % of Sales	Summer Peak Demand Savings as % of Peak Demand	Retail Cost of Energy \$/kWh	Cost of First Year Savings		Levelized Cost of Energy Savings \$/kWh	Cost of Lifetime Savings \$/kWh
					\$/kWh	\$/kW		
All Benchmarked Median	2.7%	1.7%	0.9%	\$0.12	\$0.25	\$1,825	\$0.03	\$0.02
EVT	4.0%	2.4%	1.3%	\$0.15	\$0.24	\$1,705	\$0.03	\$0.02
BED	3.6%	1.9%	1.2%	\$0.14	\$0.26	\$2,254	\$0.03	\$0.02

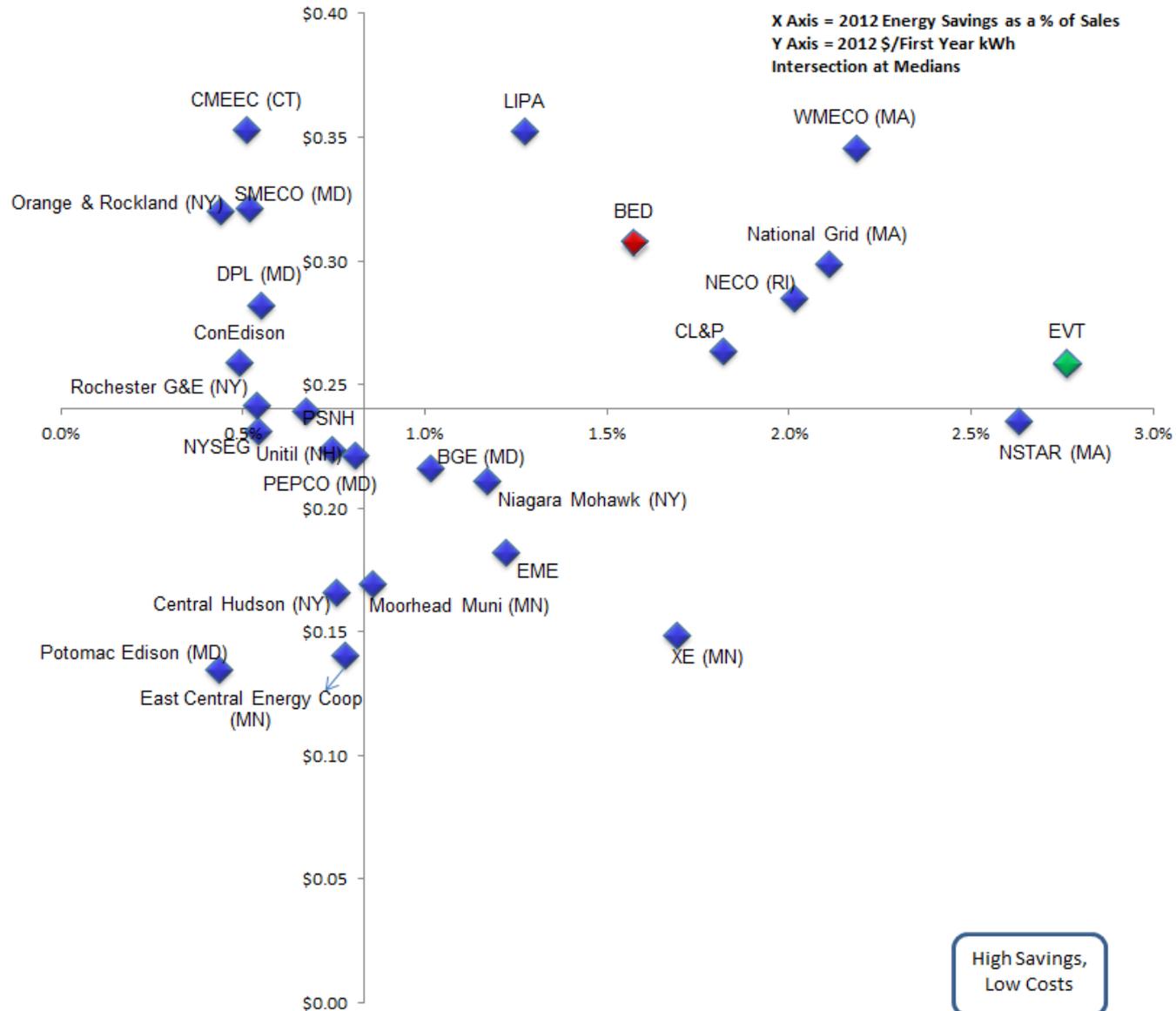
### EVT's Statistics Including Opt-Out Customers

	Spending as % of Revenue	Energy Savings as % of Sales	Summer Peak Demand Savings as % of Peak Demand	Retail Cost of Energy \$/kWh	Cost of First Year Savings		Levelized Cost of Energy Savings \$/kWh	Cost of Lifetime Savings \$/kWh
					\$/kWh	\$/kW		
EVT	3.7%	2.1%	1.2%	\$0.14	\$0.24	\$1,704	\$0.03	\$0.02

## 2011 C&I Energy Savings as % of Sales and Cost of First Year Energy Savings, \$/kWh



## 2012 C&I Energy Savings as % of Sales and Cost of First Year Energy Savings, \$/kWh

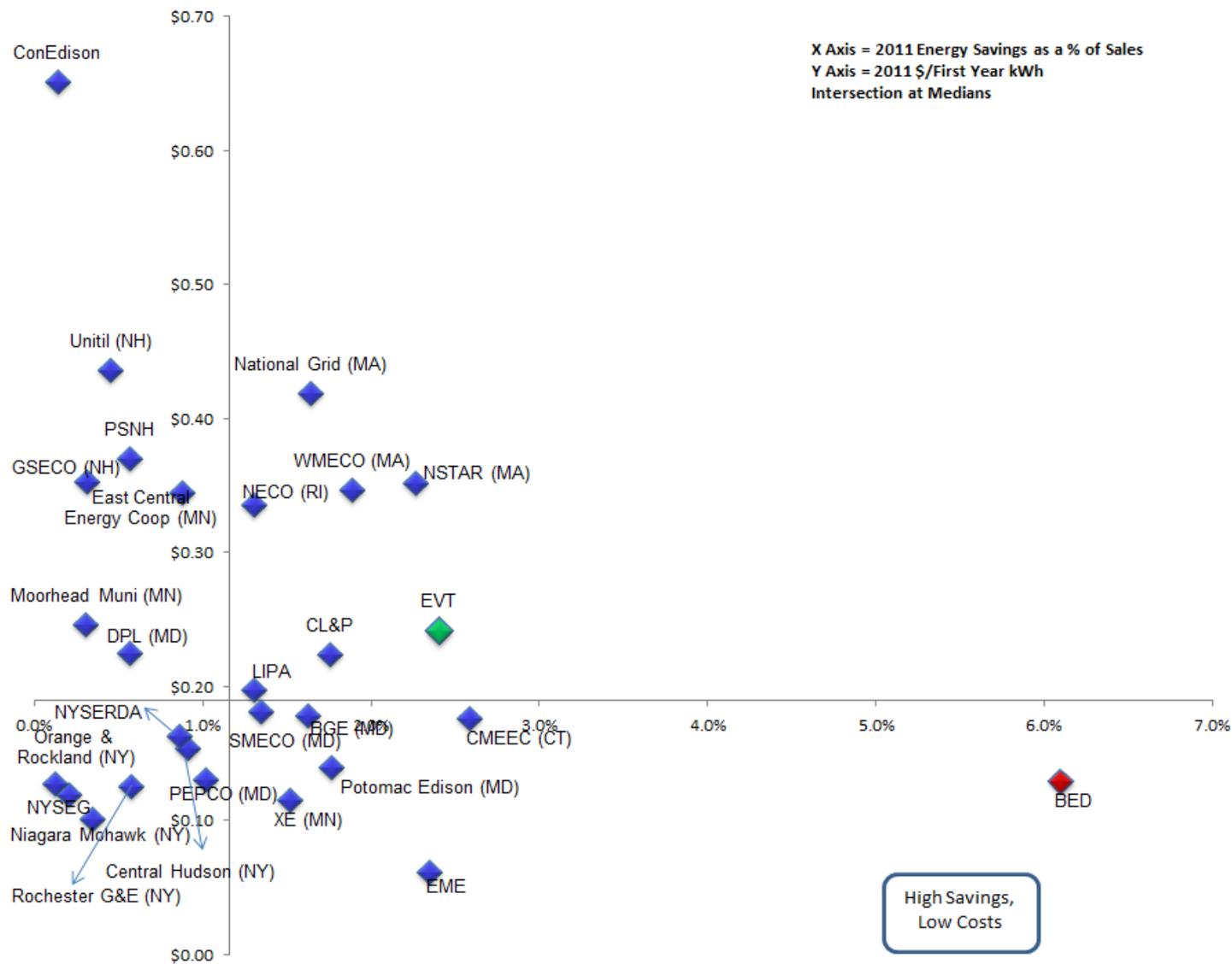


## 2011 and 2012 Residential Electric Benchmarking Results

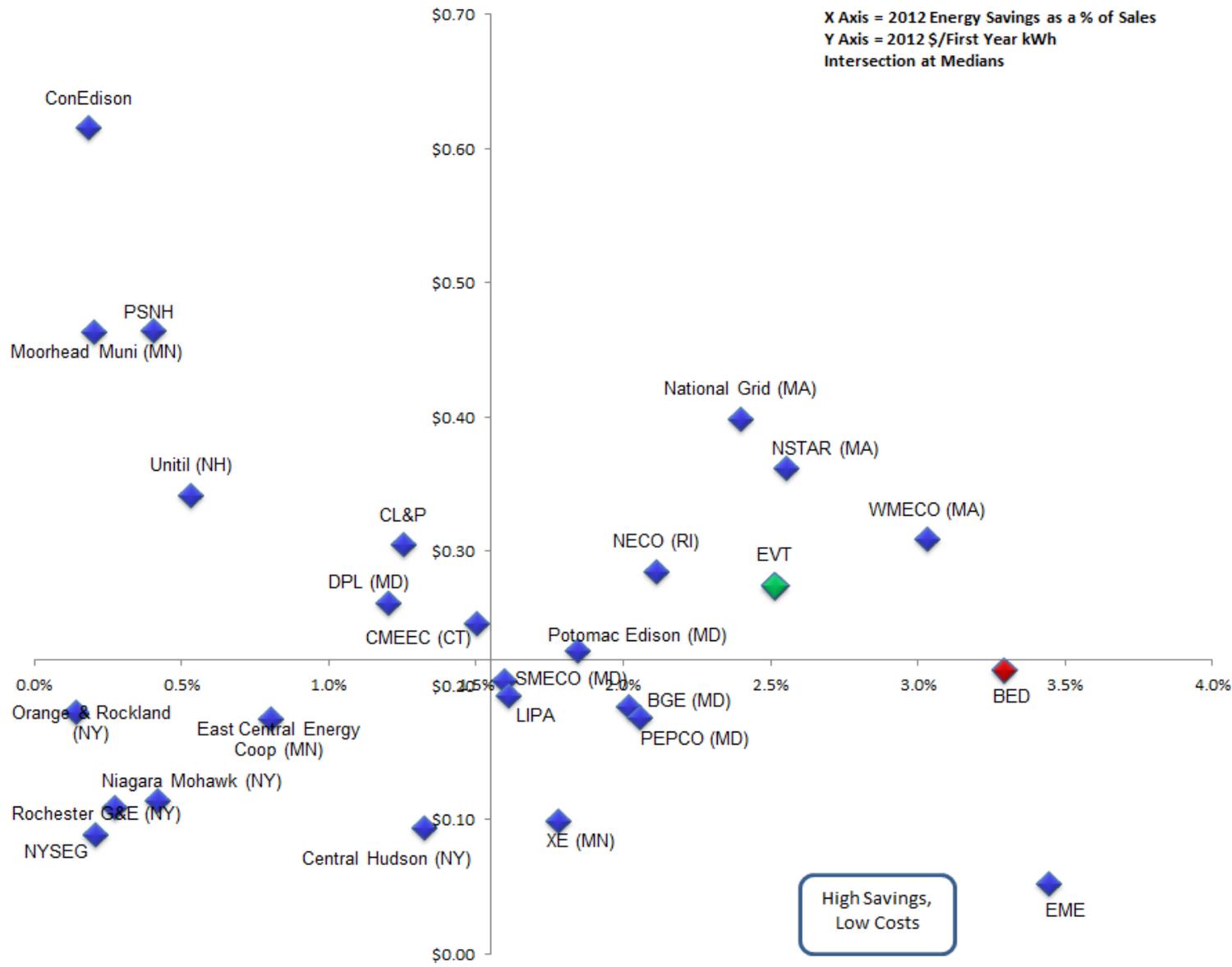
2011	Spending as % of Revenue	Energy Savings as % of Sales	Summer Peak Demand Savings as % of Peak Demand	Cost of First Year Savings		Levelized Cost of Energy Savings	Cost of Lifetime Savings
				\$/kWh	\$/kW		
All Benchmarked Median	1.4%	1.2%	0.5%	\$0.19	\$2,007	\$0.03	\$0.03
EVT	3.6%	2.4%	1.6%	\$0.24	\$2,146	\$0.03	\$0.03
BED	5.0%	6.1%	5.5%	\$0.13	\$765	\$0.02	\$0.02
2012	Spending as % of Revenue	Energy Savings as % of Sales	Summer Peak Demand Savings as % of Peak Demand	Cost of First Year Savings		Levelized Cost of Energy Savings	Cost of Lifetime Savings
				\$/kWh	\$/kW		
All Benchmarked Median	2.0%	1.5%	0.6%	\$0.22	\$2,543	\$0.04	\$0.03
EVT	4.0%	2.5%	1.4%	\$0.27	\$1,894	\$0.04	\$0.04
BED	4.5%	3.3%	0.8%	\$0.21	\$4,585	\$0.03	\$0.02

BED's 2011 residential energy savings as a % of sales is substantially higher than the median due to their focus on their promoting Retail Products program. They focused on this program to generate activity in markets due to poor economic conditions for customers caused by the recession. Also, about 10% of this program's CFL upstream bulbs are assigned commercial savings from the TRM but are tracked within the program making residential savings a bit higher.

## 2011 Residential Energy Savings as % of Sales and Cost of First Year Energy Savings, \$/kWh



## 2012 Residential Energy Savings as % of Sales and Cost of First Year Energy Savings, \$/kWh



## Specialized Analysis

- » Detailed analysis of select group of 10 organizations
  - Comparison of program-level results
  - Comparison of incentive and non-incentive program cost components
  - Detailed view of levelized cost of energy savings
  - Excluded cost and savings from programs targeted at:
    - Demand Response
    - Low Income
    - Fuel Switching
    - Market Transformation
    - Behavioral
    - Codes and Standards

## 2012 C&I Electric Specialized Benchmarking Results

	Spending as % of Revenue	Energy Savings as % of Sales	Summer Peak Demand Savings as % of Peak Demand	Cost of First Year Savings		Levelized Cost of Energy Savings	Cost of Lifetime Savings
				\$/kWh	\$/kW	\$/kWh	\$/kWh
All Benchmarked Median	2.9%	1.4%	1.0%	\$0.26	\$1,805	\$0.03	\$0.02
EVT	5.4%	2.8%	1.5%	\$0.26	\$1,872	\$0.02	\$0.02
BED	3.6%	1.6%	1.4%	\$0.31	\$1,901	\$0.03	\$0.02

**EVT's and BED's Existing Buildings programs' energy savings as a percentage of sales are among the highest compared to the other utilities' retrofit programs.**

## C&I Energy Savings as Percentage of Sales by Program

C&I										
	EVT-N	BED-N	CL&P-N	CMEEC (CT)-N	EME-N	Moorhead Muni (MN)-N	National Grid (MA)-N	NSTAR (MA)-N	PSNH-N	SMECO (MD)-N
Program/Measures										
Program/Measures										
Lighting						0.26%				
Cooling/Heating/Roofing						0.01%				
Refrigeration						0.06%				
Motors						0.48%				
Compressed Air						0.05%				
Prescriptive				0.03%	0.61%					0.38%
Retrofit	2.13%	1.33%	0.88%	0.48%			0.95%	1.58%	0.23%	
Custom Rebates										0.09%
Grants					0.61%					
New Construction	0.58%	0.24%	0.44%				0.77%	0.72%	0.19%	
Small Business			0.34%				0.38%	0.34%	0.22%	0.05%
Self Direct	0.04%									
O&M			0.14%							
Pilot									0.03%	
Total C&I Savings (GWh)	70.5	4.1	170.7	7.0	86.5	2.2	264.2	388.9	31.5	6.9
Annual C&I Sales (GWh)	2,559.9	259.3	9,512.6	1,377.4	7,080.3	\$259.3	\$12,530.8	\$14,794.5	\$4,683.3	\$1,332.3
C&I Savings as % of C&I Sales	2.8%	1.6%	1.8%	0.5%	1.2%	0.9%	2.1%	2.6%	0.7%	0.5%

EVT and BED's Existing Buildings program is included in the Retrofit row.

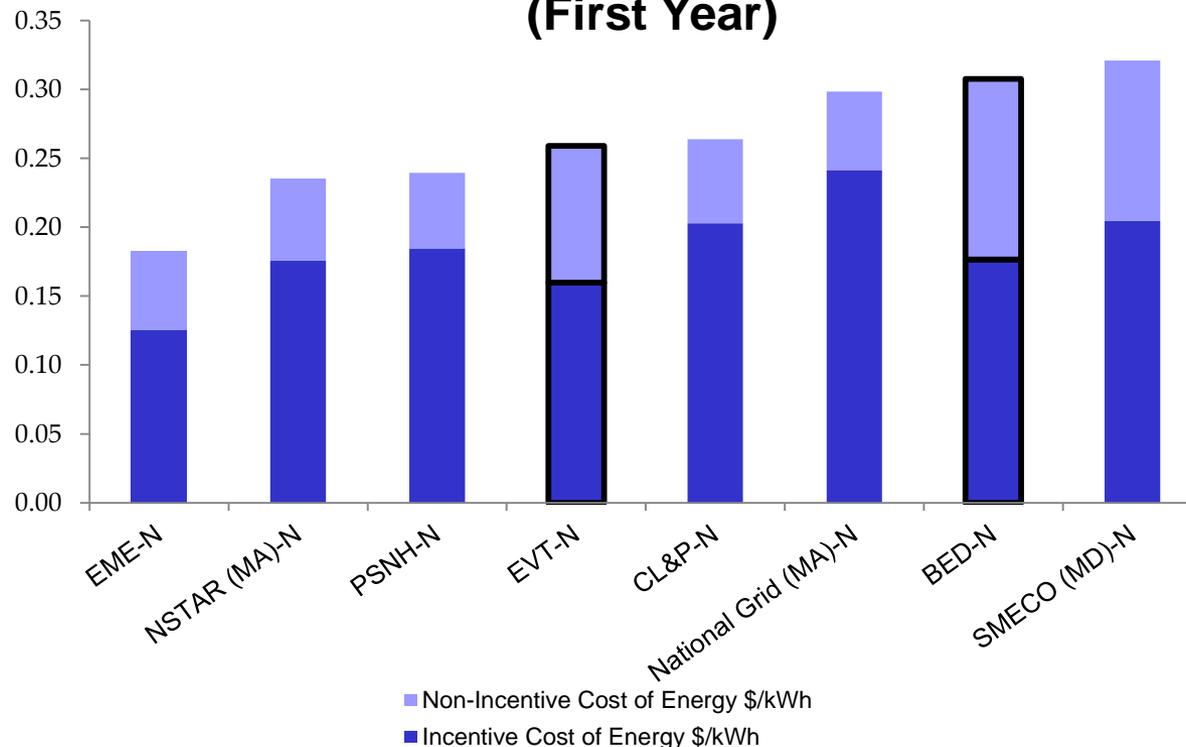
EVT and BED's C&I cost of energy savings for these programs are slightly higher than most of the other utilities' retrofit programs.

### First Year Cost of C&I Energy Savings by Program

C&I										
	EVT-N	BED-N	CL&P-N	CMEEC (CT)-N	EME-N	Moorhead Muni (MN)-N	National Grid (MA)-N	NSTAR (MA)-N	PSNH-N	SMECO (MD)-N
Program/Measures										
<b>Lighting</b>						\$0.20				
Cooling/Heating/Roofing						\$0.89				
Refrigeration						\$0.07				
<b>Motors</b>						\$0.05				
Compressed Air						\$0.12				
<b>Prescriptive</b>				\$0.30	\$0.22					\$0.23
Retrofit	\$0.27	\$0.29	\$0.24	\$0.36			\$0.29	\$0.20	\$0.20	
<b>Custom Rebates</b>										\$0.46
New Construction	\$0.23	\$0.43	\$0.22				\$0.23	\$0.21	\$0.23	
<b>Small Business</b>			\$0.41				\$0.43	\$0.45	\$0.28	\$0.75
Self Direct	\$0.19									
O&M			\$0.16							
Pilot									\$0.32	
<b>Total C&amp;I Savings (GWh)</b>	70.5	4.1	170.7	7.0	86.5	2.2	264.2	388.9	31.5	6.9
<b>Total Costs (\$M)</b>	\$18.26	\$1.3	\$45.00	\$2.49	\$15.83	\$0.39	\$78.83	\$91.52	\$7.55	\$2.21
<b>Costs of C&amp;I Savings (\$/kWh)</b>	\$0.26	\$0.31	\$0.26	\$0.35	\$0.18	\$0.17	\$0.30	\$0.24	\$0.24	\$0.32

**EVT's and BED's C&I spending on incentives (62% and 57%, respectively) are less than the median of the group's (72%).**

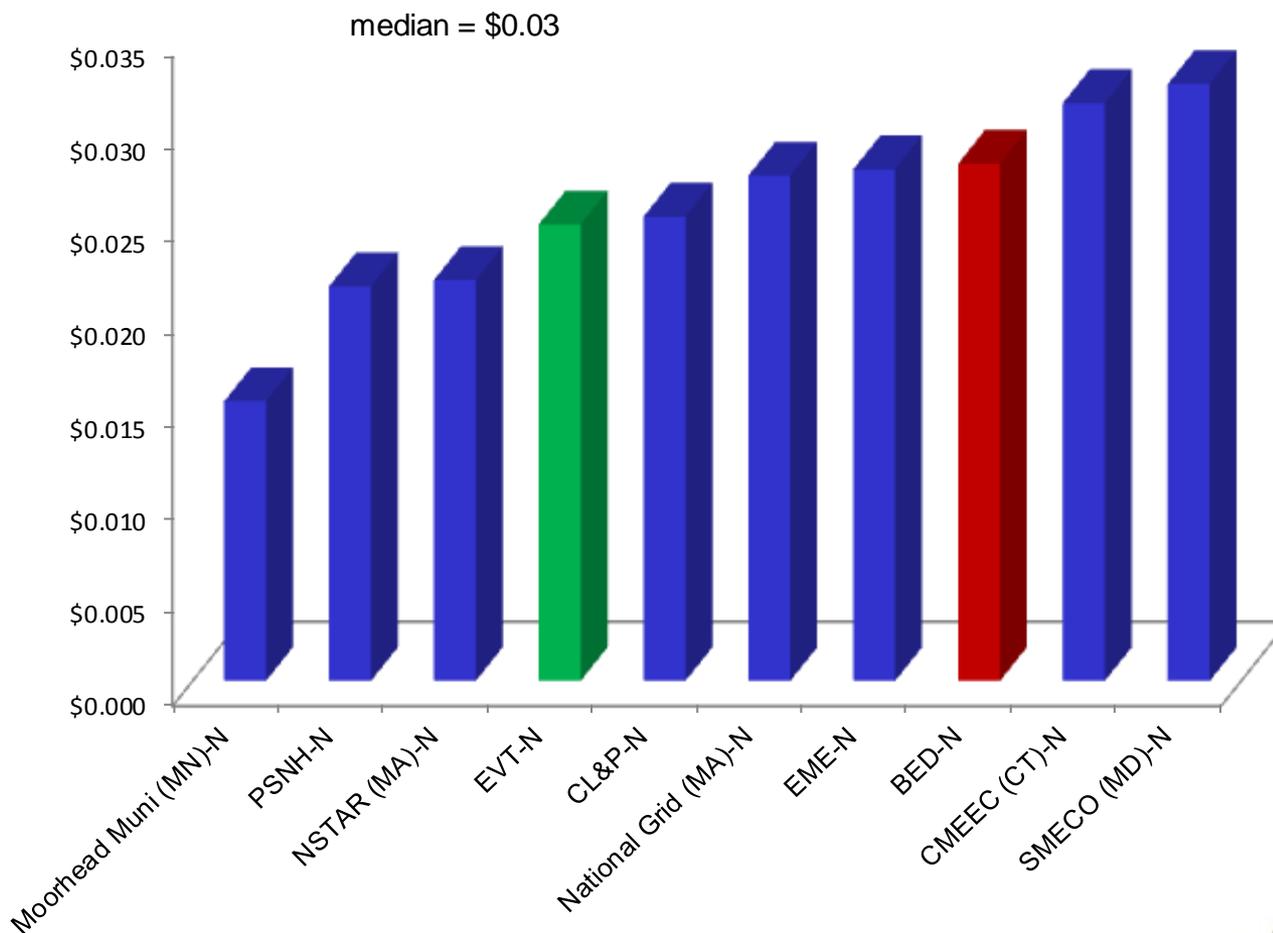
**2012 C&I Incentive/Non-Incentive Cost Detail (First Year)**



	Incentive		Non-Incentive		Total \$/kWh
	\$/kWh	% of Total	\$/kWh	% of Total	
<b>All Benchmarked Median</b>	\$0.18	72%	\$0.06	28%	\$0.24
EVT	\$0.16	62%	\$0.10	38%	\$0.26
BED	\$0.18	57%	\$0.13	43%	\$0.31

**EVT's C&I levelized cost of energy is \$0.02/kWh which is below the median of \$0.03/kWh while BED's is about the median.**

2012 C&I  
Levelized Cost of Energy \$/kWh



## 2012 Residential Electric Specialized Benchmarking Results

	Spending as % of Revenue	Energy Savings as % of Sales	Summer Peak Demand Savings as % of Peak Demand	Cost of First Year Savings		Levelized Cost of Energy Savings	Cost of Lifetime Savings
				\$/kWh	\$/kW	\$/kWh	\$/kWh
All Benchmarked Median	2.1%	1.5%	0.6%	\$0.22	\$2,221	\$0.04	\$0.03
EVT	2.6%	2.0%	1.2%	\$0.22	\$1,438	\$0.04	\$0.03
BED	3.5%	2.9%	0.7%	\$0.19	\$4,599	\$0.03	\$0.02

**EVT's and BED's Efficient Products programs' (which include lighting measures) residential energy savings as a percentage of sales are among the highest of the group.**

## Residential Energy Savings as Percentage of Sales by Program

Residential										
	EVT-N	BED-N	CL&P-N	CMEEC (CT)-N	EME-N	Moorhead Muni (MN)-N	National Grid (MA)-N	NSTAR (MA)-N	PSNH-N	SMECO (MD)-N
Program/Measures										
Lighting				0.67%	3.21%	0.01%	1.00%	1.54%	0.26%	1.10%
Cooling/Heating/Roofing						0.10%	0.04%	0.03%		0.06%
ES Appliances				0.01%	0.13%	0.05%	0.10%	0.14%	0.08%	0.06%
Products	1.84%	2.66%	0.94%							
Appliance Recycling					0.09%	0.04%				0.07%
Retrofit	0.11%	0.22%	0.17%	0.51%			0.20%	0.28%	0.01%	0.21%
Multifamily							0.13%	0.13%		
New Construction	0.06%	0.05%	0.02%				0.03%	0.05%	0.03%	0.07%
Total Residential Savings (GWh)	40.2	2.5	113.1	6.3	153.3	0.3	131.3	146.6	11.9	32.0
Annual Residential Sales (GWh)	2,011	84	9,978	534	4,481	160.3	8,792.2	6,763.0	3,137.5	2,044.3
Residential Savings as % of Residential Sales	2.0%	2.9%	1.1%	1.2%	3.4%	0.2%	1.5%	2.2%	0.4%	1.6%

**The cost of EVT and BED's Efficient Products programs are also among the highest while the cost of their Existing Homes programs are among the lowest.**

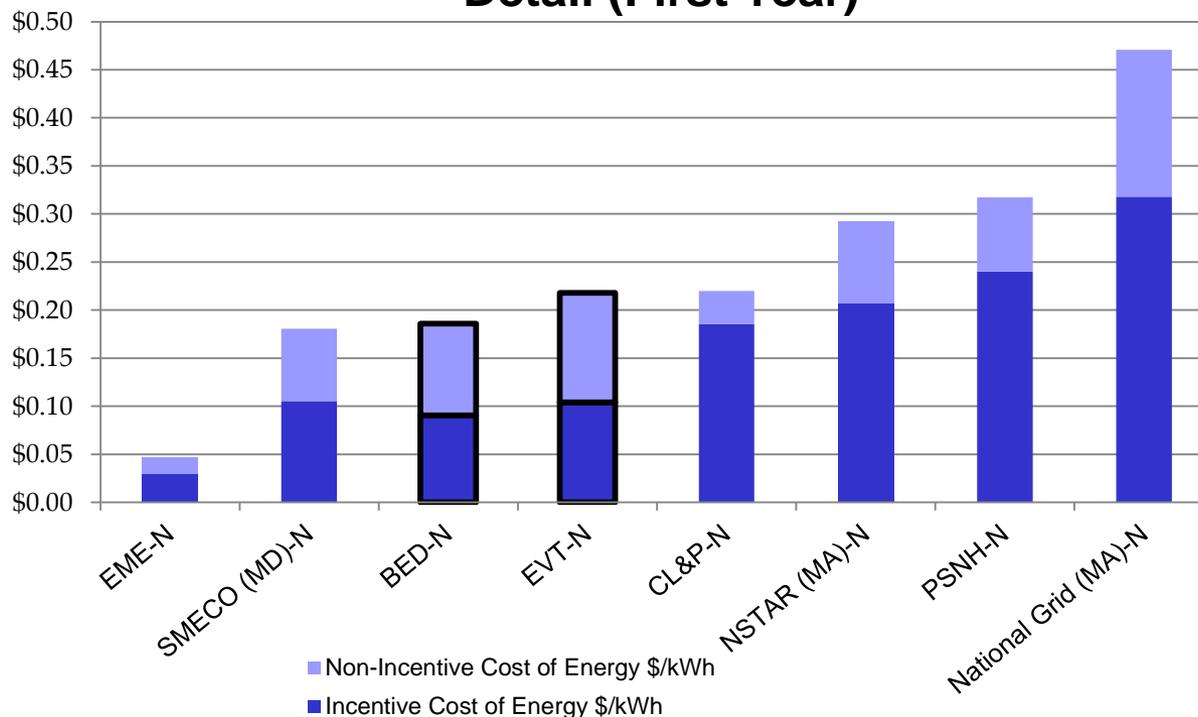
### First Year Cost of Residential Energy Savings by Program

Residential										
	EVT-N	BED-N	CL&P-N	CMEEC (CT)-N	EME-N	Moorhead Muni (MN)-N	National Grid (MA)-N	NSTAR (MA)-N	PSNH-N	SMECO (MD)-N
Program/Measures										
Lighting				\$0.10	\$0.03	\$0.49	\$0.13	\$0.09	\$0.10	\$0.05
Cooling/Heating/Roofing						\$0.22	\$1.10	\$1.32		\$0.68
ES Appliances				\$6.53	\$0.31	\$0.30	\$0.37	\$0.23	\$0.29	\$0.82
Products	\$0.16	\$0.10	\$0.08							
Appliance Recycling					\$0.15	\$0.10				\$0.24
Retrofit	\$0.37	\$0.85	\$0.92	\$0.27			\$1.46	\$1.14	\$3.02	\$0.37
Multifamily							\$0.63	\$0.60		
New Construction	\$1.86	\$1.75	\$0.81				\$0.72	\$0.43	\$1.10	\$0.65
Total Residential Savings (GWh)	40.2	2.5	113.1	6.3	153.3	0.3	131.3	146.6	11.9	32.0
Total Costs (\$M)	\$8.8	\$0.5	\$24.9	\$1.3	\$7.2	\$0.1	\$61.8	\$42.8	\$3.8	\$5.8
Costs of Residential Savings (\$/kWh)	\$0.22	\$0.19	\$0.22	\$0.21	\$0.05	\$0.31	\$0.47	\$0.29	\$0.32	\$0.18

EVT and BED's Existing Homes program is included in the Retrofit row.

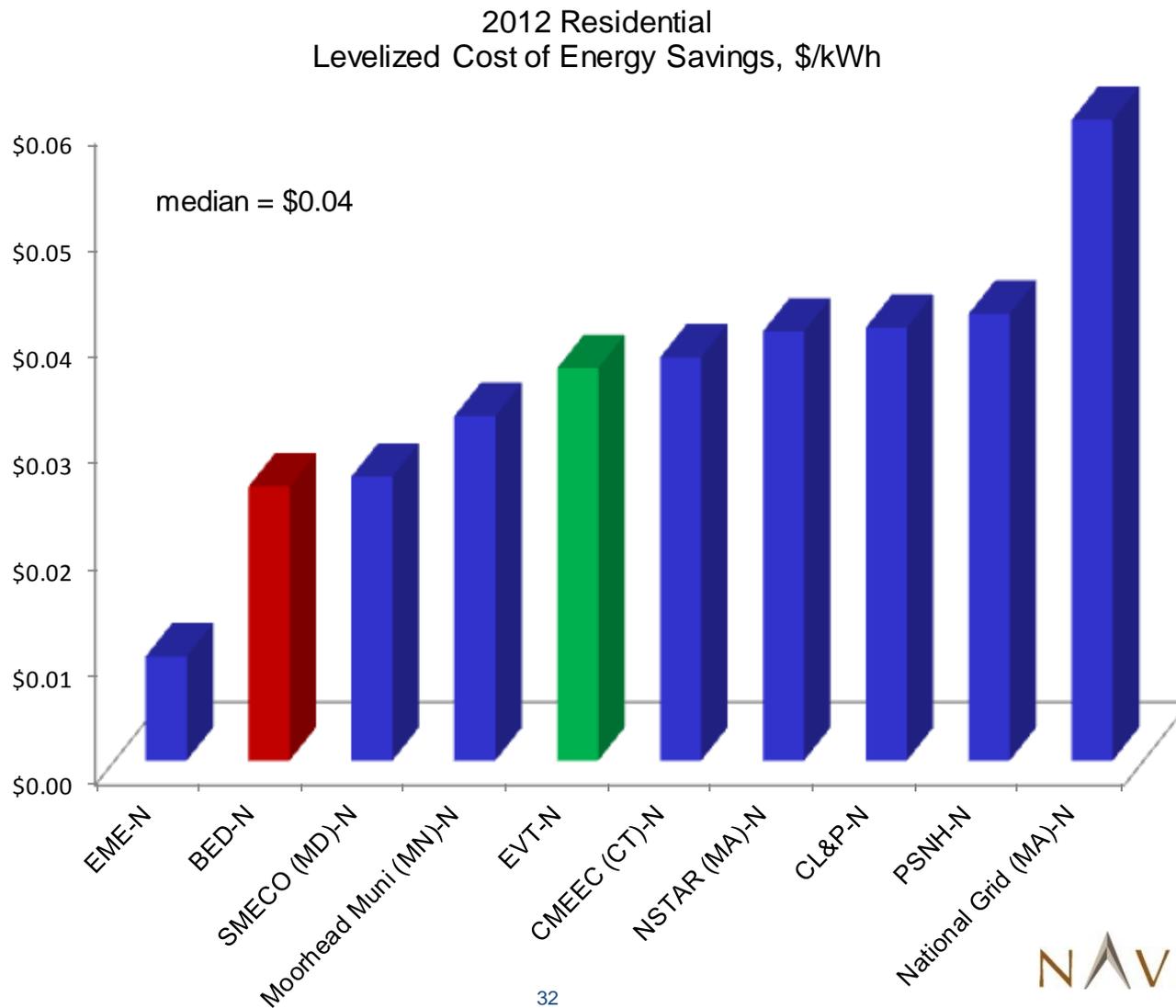
**EVT's and BED's residential spending on incentives (about 49%) are less than the median of the group's (65%).**

### 2012 Residential Incentive/Non-Incentive Cost Detail (First Year)



	Incentive		Non-Incentive		Total \$/kWh
	\$/kWh	% of Total	\$/kWh	% of Total	
<b>All Benchmarked Median</b>	\$0.15	65%	\$0.08	35%	\$0.23
EVT	\$0.10	48%	\$0.11	52%	\$0.22
BED	\$0.09	49%	\$0.10	51%	\$0.19

**EVT's residential levelized cost of energy is \$0.04/kWh which is the median while BED's residential levelized cost of energy is below the median at \$0.03/kWh**



## Specialized Analysis - Interviews

- » To better understand the 2012 performance of EVT and BED, Navigant completed interviews with the following organizations:
  - Efficiency Vermont
  - Burlington Electric Department
  - Efficiency Maine
  - Connecticut Light& Power
  - NSTAR
  
- » **Key Questions**
  - Which of your programs do you consider to be working well in terms of program delivery?
  - Which of your programs are having some difficulty in terms of program delivery?
  - Overall, what do you consider to be the key factors that contributed to your 2012 portfolio results? Was there something new or innovative in 2012 in particular that you believe significantly influenced portfolio or program performance?

## Key Successes

- » Efficiency Vermont (EVT)
  - Major factors that influenced 2012 results date back to 2009 “Great Recession”. EVT underspent budgets by 10-15% in 2009 given low demand for EE and was not achieving savings targets. To meet the three year performance target- EVT ramped up incentive levels and outreach in 2010 and 2011- and successfully achieved goals, but at a high cost. For 2012-primarily a budget conscious, cost-cutting, year.
- » Burlington Electric Department (BED)
  - Their Retail products program contributed to their high residential program savings. Ten percent of CFL upstream bulbs are assigned commercial savings from the TRM but tracked within the Retail Products program. Eight percent of total statewide EVT Retail Product sales are deemed to BED based on historical coupon rebate records
- » Efficiency Maine (EME)
  - They prioritized low-cost EE resource acquisition in 2012. Their philosophy was to save as much as possible, at the lowest cost. Comprehensive (and more expensive) savings were not prioritized in 2012.
  - Dropping marketing expenditures and focusing simply on higher rebates for the residential lighting program was successful in significantly increasing sales.

## Key Successes

- » Connecticut Light and Power (CL&P)
  - Their residential retail lighting program, residential new construction program, and C&I large retrofit program contributed to their success.
  - They also attributed their successful performance to their Home Energy Solutions program - \$75 customer cost for a home energy audit and immediate direct install of CFLs as well as blower door guided air sealing, duct sealing, low flow shower heads and facet aerator as well as the recommendation of add on measures for additional energy savings. CL&P contracts with a pre-qualified group of trade ally vendors for this service through an RFP process.
  
- » NSTAR (MA)
  - They attribute their success based on their overall focus on “go-to-market” strategies in which customers are researched extensively and offered tailored participation options, including comparative benchmarks (e.g. comparing peer group building types or business types energy consumption).
  - Statewide in MA, residential customers receive generous rebates. For example, free home energy audit with direct install and free air-sealing. Additional incentives provided for insulation, up to 75% of installed cost capped at \$2,000. This statewide program and generous incentives account for higher than median residential savings costs.

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## Total Portfolio

- » **EVT and BED's energy efficiency programs have higher energy savings compared to most of the organizations benchmarked for this analysis.** EVT's programs saved about 2.4% of baseline sales, while BED's programs saved about 1.9% of baseline sales. The median savings for the benchmarked organizations is 1.7% of baseline sales.
- » **EVT's first year cost of saved energy is less than the median for the organizations benchmarked in this analysis while BED's is just above the median.** EVT's cost of saved energy is about \$0.24/kWh, while BED's cost of saved energy is \$0.26/kWh. The median cost of saved energy for the benchmarked organizations is \$0.25/kWh.
- » **EVT and BED's energy efficiency programs have the second and third highest peak demand savings compared to the rest of the benchmarked organizations.** EVT and BED's programs saved about 1.3% of retail peak demand, while the median savings for the group of organizations is less 1.0% retail peak demand.
- » **EVT's cost of peak demand savings is less than the median for the organizations benchmarked while BED's cost of peak demand savings is above the median.** EVT's cost of peak demand savings is \$1,705/kW, while BED's cost of peak demand savings is \$2,254/kW. The median cost of saved peak demand is \$1,825/kW.

## C&I Sector

- » **EVT achieved the largest C&I energy savings of any of the organizations reviewed, about 2.8% of C&I baseline sales.** This amount of savings is about double the median of the benchmarked utilities (1.4% of sales).
- » **EVT's first year cost of C&I energy savings of \$0.26/kWh is about the median first year cost of C&I energy savings for the group.** The main reason for EVT's above median energy savings at median costs is due to its Existing Buildings program. This program achieved more than 75% of EVT's C&I energy savings at costs just above the median \$0.27/kWh. About 60% of savings for this program came from lighting measures and 17% of savings came from industrial process efficiencies. EVT's New Construction program achieved 21% of its C&I energy savings at below median costs, \$0.23/kWh.
- » **BED's C&I energy savings of 1.6% of baseline sales is also above the median of the benchmarked utilities.**
- » **BED's first year cost of C&I energy savings of \$0.31/kWh is above the median first year cost of C&I energy savings.** BED also achieved most of its C&I energy savings (85%) through its Existing Buildings programs at above median costs, \$0.29/kWh. About 60% of the savings for this program came from lighting measures and 30% of savings came from ventilation measures. Its New Construction program achieved 15% of its C&I energy savings at above median costs, \$0.43/kWh.

## Residential Sector

- » **EVT and BED's residential energy efficiency programs have higher energy savings compared to most of the organizations benchmarked in this analysis.** EVT's residential programs saved about 2.0% of residential baseline sales, while BED's residential programs saved about 2.9% of residential baseline sales. The median savings for the other benchmarked organizations is 1.5% of residential baseline sales.
- » **EVT's residential first year cost of saved energy is the residential median for the organizations benchmarked while BED's residential first year cost of saved energy is below the median.** EVT's residential cost of saved energy is about \$0.22/kWh, while BED's residential cost of saved energy is \$0.19/kWh. The median cost of residential energy saved is \$0.22/kWh
- » **The Retail Products programs account for about 92% of both EVT and BED's total residential energy savings.** Lighting measures account for about 88% of these programs' energy savings. Relying on one technology for almost 90% of residential savings is a more risky strategy than having a more balanced portfolio of programs. Future CFL regulations or legislation or increasing market saturation of CFLs could lead to significant decreases of residential portfolio savings for EVT and BED in the future if they continue to rely on CFLs for almost all of their residential energy savings. This conclusion also applies to peer program administrators who also achieved most of their residential savings from lighting programs as well.

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